What is claimed is:

1. A fuel composition for use in a compression ignition engine, comprising:

(a) a diesel fuel;

(b) ethanol;

(c) a surfactant; and

(d) a combustion improver

wherein the fuel composition produces lower levels of regulated and unregulated engine exhaust emissions.

2. The fuel composition of claim 1 wherein the diesel fuel comprises a middle distillate fuel, a Fischer-Tropsch fuel, a biodiesel fuel, or mixtures thereof; and optionally wherein the diesel fuel has an aromatic content ranging from about 5% to about 60% by weight.

3. The fuel composition of claim 1 wherein the ethanol comprises anhydrous ethanol, fuel grade ethanol containing up to about 0.1% by weight water, hydrous ethanol containing up to about 7% by weight water, or mixtures thereof.

4. The fuel composition of claim 1 wherein ethanol is present from about 0.5% up to about 25% by weight.

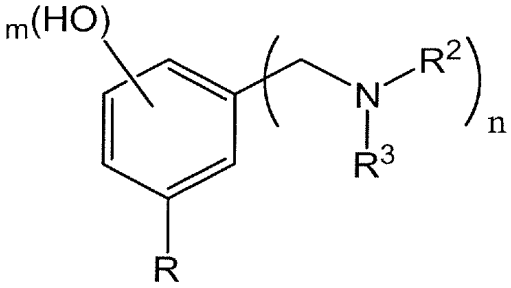
5. The fuel composition of claim 1 wherein the surfactant has an HLB value ranging from about –7 to about 20.

6. The fuel composition of claim 1 wherein the surfactant has the general formula R-X wherein R is a hydrocarbyl group containing from about 4 to about 20 carbon atoms and X is a polar group.

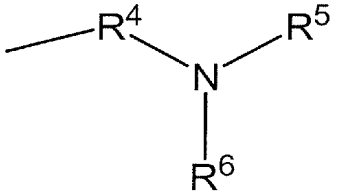
7. The fuel composition of claim 6 wherein the hydrocarbyl group R comprises heptyl, octyl, dodecyl, hexadecyl, oleyl, or mixtures thereof.

8. The fuel composition of claim 6 wherein the polar group X comprises a phenolic group or derivative thereof, a carboxylic acid group or derivative thereof, an alcoholic group or derivative thereof, or mixtures thereof.

9. The fuel composition of claim 1 wherein the surfactant comprises at least one aliphatic hydrocarbyl substituted phenol or a Mannich base of an aliphatic hydrocarbyl substituted phenol of the formula



wherein R is an aliphatic hydrocarbyl group; R^2 is hydrogen or a lower alkyl or hydroxy substituted lower alkyl radical; R^3 is a hydroxy substituted lower alkyl radical or



wherein R^4 is a lower alkylene radical; R^5 is hydrogen or a lower alkyl or hydroxy-substituted lower alkyl radical; R^6 is a hydroxy-substituted lower alkyl radical; m = 1 or 2; and n= 1 or 2.

10. The fuel composition of claim 9 wherein the Mannich base is the reaction product of dodecylphenol, formaldehyde, and diethanolamine.

11. The fuel composition of claim 8 wherein the derivative of the phenolic group, the carboxylic acid group, or the alcoholic group is the reaction product of the phenolic group, the carboxylic acid group, or the alcoholic group with an alkoxide selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, and mixtures thereof.

12. The fuel composition of claim 1 wherein the surfactant comprises a hydrocarbyl substituted carboxylic acid, an ester of a hydrocarbyl substituted carboxylic acid, or a mixture thereof.

13. The fuel composition of claim 12 wherein the ester is the reaction product of the carboxylic acid and an alcohol or an amino alcohol.

14. The fuel composition of claim 13 wherein the ester is the reaction product of an alkylsuccinic or alkenylsuccinic acid or anhydride thereof and an amino alcohol.

15. The fuel composition of claim 14 wherein the amine of the amino alcohol is a tertiary amine.

16. The fuel composition of claim 1 wherein the diesel fuel has an aromatic content ranging from about 5% to about 60% by weight; and the surfactant has an HLB value ranging from about -7 to about 20 wherein the HLB value of the surfactant is directly proportional to the aromatic content of the diesel fuel.

17. The fuel composition of claim 1 wherein the diesel fuel is about 55% to about 99% by weight, ethanol is about 0.5% to about 25% by weight, the surfactant is about 0.1% to about 8% by weight, and the combustion improver is about 0.005% to about 10% by weight.

18. The fuel composition of claim 17 further comprising from about 0.0005% to about 1.75% by weight of water.

19. The fuel composition of claim 1 wherein the combustion improver is an organic nitrate ester.

20. The fuel composition of claim 19 wherein the organic nitrate ester is an alkyl nitrate having from about 5 to about 10 carbon atoms.